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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,454	03/22/2005	Augustinus Bader	LORWER P33AUS	7961

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EXAMINER	
FORD, ALLISON M	

ART UNIT	PAPER NUMBER
1651	

MAIL DATE	DELIVERY MODE
11/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Advisory Action Before the Filing of an Appeal Brief	**Application No.** 10/523,454	**Applicant(s)** BADER, AUGUSTINUS	
	Examiner Allison M. Ford	**Art Unit** 1651	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 29 October 2007 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:
   a) ☐ The period for reply expires _____ months from the mailing date of the final rejection.
   b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

   Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
   (b) ☐ They raise the issue of new matter (see NOTE below);
   (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☒ Newly proposed or amended claim(s) *96 and 113-123* would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
   The status of the claim(s) is (or will be) as follows:
   Claim(s) allowed: *96 and 113-123*.
   Claim(s) objected to: *91,93,95 and 97-99*.
   Claim(s) rejected: *87-90,92 and 94*.
   Claim(s) withdrawn from consideration: *100-107*.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). _____
13. ☒ Other: See Continuation Sheet.

Leon B. Lankford, Jr.
Primary Examiner
Art Unit 1651

Claims 87-90, 92 and 94 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Bader (WO 01/09282) (translation provided for US national stage application 10/048,440 replied upon for English version- pages cited are those of application 10/048,440).

Bader teaches a cell culturing device and a method of culturing cells on said device to produce a tissue construct which can be in a desired shape. The cell culture device of Bader comprises a support, such as a cell carrier plate; a carrier film laid directly on the support; and a flexible plastic cell-culture film that is attached at the edges to the carrier plate and/or carrier film so as to form a cell culture chamber between the two films (See Bader, abstract). The cells may be cultured directly in the cell culture chamber on the films or an extracellular matrix may be placed in the interior of the cell culture chamber to provide a substrate for the cells (See Bader, Pg. 11, ln 7-19).

In comparing the method of Bader (WO 01/09282) to the instant invention, the extracellular matrix is considered to read on the 'porous support structure'; the films are considered to read on the 'boundary layer' which surrounds the extracellular matrix (porous support structure). The extracellular matrix (porous support structure) can comprise collagen (See Bader, Pg. 14, ln 26-36) or tricalcium phosphate (See Bader, Pg. 11, ln 14-19), both are porous materials which are permeable to the cells and can be degraded or absorbed by the cells (which applicant calls biologically converting the support structure). The cell carrier and/or cell culture films (boundary layer) may be gas-permeable (See Bader, abstract); furthermore because the films form the cell culture chamber, both films (which make up the boundary layer) must be impermeable to cells so as to retain the cell culture in the defined area. The films (boundary layer) may consist of PTFE, silicone, polylactide, polyhydroxyalkanoate, or polyhydroxidebutyrates (See Bader, Pg. 18, ln 24-30); such materials are synthetically made from biological materials, thus they are considered both 'synthetic' and 'biological' materials.
The method of cell culture disclosed by Bader (WO 01/09282) comprises introducing cells into the extracellular matrix (porous support structure) which is located within the cell culture chamber formed by the films (boundary layers), and supplying nutrients to the cells on the extracellular matrix (porous support structure) via inflow and outflow lines; oxygen is supplied to the growing cells through the gas-permeable films (boundary layers) (See Bader, Pg. 16, ln 25-37 & Pg. 5, ln 13-27).

In order to more clearly show how the method of Bader reads on the instantly claimed method, each of the claimed steps will be further discussed below:
Regarding the step of forming the inert porous support material into the desired shape, it is noted that Bader teaches the extracellular matrix (porous support structure) can approximate the size and shape of a desired tissue, for example, bone, heart valve or bladder, so that the finished cell culture may be used to reconstruct the desired tissue (See Bader, Pg. 14, ln 9-17); thus it is inherently required that an initial step comprise forming the extracellular matrix material into the desired shape and size. It is further noted that the extracellular matrix material, once formed, at least 'substantially maintains' the predetermined shape.

Regarding the step of encapsulating the entire porous structure by means of a boundary layer of cell-impermeable material, it is noted that Bader teaches the cells are introduced into the extracellular matrix (porous support structure) inside the cell culture chamber (which is formed by the films (boundary layers)); therefore, the extracellular matrix (support structure) is placed within the cell culture chamber formed by the films (boundary layer), and thus the extracellular matrix is encapsulated by the films (boundary layer). Because the films encompass the extracellular matrix, they are considered to 'substantially conform' to the predetermined size and shape of the extracellular matrix material. Please note the claims must be given their broadest reasonable interpretation. The new limitation that the boundary layer must 'substantially conform in size and shape to the porous support' is not clearly defined in the specification; therefore in giving this limitation ("substantially") its broadest reasonable interpretation, any correlation between the films (boundary layer) and the extracellular matrix (porous support structure) is considered to read on the instant limitations. Furthermore, the fact that the extracellular matrix material fits within the films (boundary layer) means there must be some substantial correlation in shape and size, as they are compatible with one another, clearly two objects which have no correlation in size and shape would not be able to be combined, one within the other.

Regarding the step of introducing the cells to the porous support structure, it is noted that Bader teaches inoculating the cells onto the extracellular matrix (porous support material) via inflow and outflow lines (which applicants call inlets) (See Bader, Pg. 16, ln 25-37 & Pg. 5, ln 13-27).

Regarding the step of promoting cell growth by introducing oxygen and nutrients into the porous structure and allowing cells to consume the nutrients and the oxygen and to grow and conform to the shape and size of the porous support structure, it is noted that Bader teach nutrients is supplied to the cells on the extracellular matrix (porous support structure) via the inflow and outflow lines and oxygen is supplied to the growing cells through the gas-permeable films (boundary layers) (See Bader, Pg. 16, ln 25-37 & Pg. 5, ln 13-27). Furthermore, it is noted that the nutrient medium is considered to read on the 'intermediate layer', and thus supplying the nutrient media via the inflow and outflow lines is considered to read on the step of supplying an intermediate layer.

Finally, regarding the step of removing the boundary layers, it is noted that Bader teaches the films (boundary layers) are removable, or may be dissolvable, after the cell culture is complete (See Bader, Pg. 14, ln 14-21); however, they do not specifically teach removing the films, and thus differs in this point.
However, it would have been obvious to one of ordinary skill in the art to remove the films (boundary layers) after the cell culture is complete in order to recover and use the tissue construct produced, which has the shape originally provided by the extracellular matrix (porous support structure). One would expect success in removing the films (boundary layer) in order to recover the tissue construct because Bader teaches the films (boundary layer) are removable or dissolvable (Claims 87-90, 92 and 94). Therefore the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made.